



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,537	03/30/2001	Abdeslam Bouti	H-581US-0	7661

24132

7590

07/16/2003

HUSKY INJECTION MOLDING SYSTEMS, INC

288 NORTH ROAD

MILTON, VT 05468

EXAMINER

LUK, EMMANUEL S

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,537

Applicant(s)

BOUTI, ABDESLAM

Examiner

Emmanuel S. Luk

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,20,23,24,35,37-42,44 and 45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20,23,24,35,37-42,44 and 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 19, 20, 23, 24, 35, 37-40, 42, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al in view of Schmidt.

Swenson teaches the claimed injection molding system having a mixer housing (bushing assembly), (Col. 3, lines 31-45), comprising of an annular, inner, flow insert (21) located in an insert (29) that has a valve stem (pin, 17) that is slidably inserted in the mixer housing (Col. 3, lines 31-45), the valve stem operatively connected to a piston (53) at a top distal end (41) and terminated adjacent to a nozzle outlet, or gate (9) with the bottom end (47) of the valve pin. A helical channel, formed by the grooves (75, 79, 80, 81) is formed on the outside surface of the inner insert thus on an internal or inside surface of the bushing assembly, the flowing melt from a nozzle (11), the flow exit of the

Art Unit: 1722

mixer housing (Fig. 2) being approximately perpendicular to the flow inlet, or opening (77), helical heaters (18) keep the melt material from cooling in the channel. The helical channel reducing cross-sectional area as the melt channel flows to the exit (Col. 4, lines 63-66), the outer surface of the mixer is tapered (Fig. 2), and the bore, or wall, of the inner insert (29), is tapered while the gap between the helical channel and the bore decreases in the direction of the exit (Col. 4, lines 65-68). A locating pin (24) [as in claims 23, 39 and 45] maintains the alignment of the helical channel to the melt channel while the piston housing is affixed to the mixer housing (Fig. 2).

In regards to claim 45, the locating pin (24) is the locator that maintains alignment between the mixer and the nozzle.

Swenson fails to teach a hot runner manifold and the outlet of the mixer being perpendicular to the inlet.

However, Swenson does teach a slight offset between the inlet (77) with the outlet (9).

Schmidt teaches an injection molding machine where the melt (23) flows from a hot runner manifold (12), the hot runner (22) through the channel past a bushing (40) having a conical shape (52) and valve stem (30) to the nozzle (25). Schmidt also teaches inlet channel (23) being perpendicular to the outlet channel (24) of the bushing. Both Swenson and Schmidt teach that flow separation, dead spot and heat shear can be eliminated or minimized in systems where flow around the valve pin causes a ninety degree change in direction, while allowing distribution of a flow of melt material to the

Art Unit: 1722

nozzle structure. There are similarities of connecting channel (46) of Schmidt to the opening channel (77) of Swenson et al.

It would have been obvious to one of ordinary skill in the art to modify Swenson with a hot runner manifold and a change in direction in flow direction via perpendicular orientation of the flow inlet to the flow outlet as taught by Schmidt because it allows for distribution of the melt material to the nozzle structure and to improve the flow around a valve pin.

4. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swenson et al (5,916,605) in view of Schmidt (5,192,556) as applied to claims 19, 20, 23, 24, 35, 37-40, 42, 44 and 45 above, and further in view of Rees et al (4,173,448).

Swenson fails to teach a cover and fasteners to affix the bushing to the manifold.

Rees et al teaches an injection molding apparatus having a bushing, or boss (19), located in the bore of the manifold (22), the bushing having plate (10), that acts as a cover and a fastener, or pin (48), to maintain a fixed position between the plate and cylinder (20).

It would have been obvious to one of ordinary skill in the art to modify Swenson with a cover and fasteners as taught by Rees et al because it maintains the position of the bushing to the manifold.

Response to Arguments

5. Applicant's arguments with respect to claims 19, 20, 35, 40, 44 and 45 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1722

In a previous communications, the applicants have argued that Swenson et al taught a mixer having the helical flow on the outside surface, while differentiating the claims by amending the helical flow on the interior surface. However, the inner insert coupled with the annular flow insert forms the mixer housing and is considered the internal surface. The gap between the valve stem and lands gradually increase in a direction from the inlet to the outlet.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (703) 305-1558. The examiner can normally be reached on Monday through Friday 8 to 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

E.L.
July 2, 2003


JOSEPH DRODGE
PRIMARY EXAMINER